Software Release Notice

System: WGS **Release:** NASA 3.0
Date: March 7, 2000

Modification Description:

Wallops Station Upgrade

The following changes are planned for Wallops Ground Station software. This release contains test programs to diagnosis reported problems. Modifications that have been completed since the NASA2.05 release.

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1. On the tape log screen, the option to close screen with the '-' was removed because this would close the SCC software.
2. Corrected bug in scheduling supports characterized by the following actions. When using the scheduler, choose a satellite and push the "Pass Gen" button. All orbits for that satellite are displayed. Choose an orbit, push the "Copy pass" button, and then push the "Cancel" button to not schedule the support. If you now choose a different orbit and push the "copy pass", you'll get the same AOS and LOS time as for the first orbit.
3. Corrected where X-Band Track Marconi would only configure to the frequency in the default and not to the frequency specified from the configuration screen. Associated with this fix is a tool to fix all the corrupted configuration files. (Lien Item 10, 16)
4. Allow support for up to 100 Satellites and add graceful degradation if more than 100 Satellites are tried.
5. Corrected the track analysis problem that showed low elevation droop in the elevation delta. Changed orbit predictor from SA predictor to SGP4.
6. Enhanced software for the Marconi Local Oscillator generator so that it provides a selection for remote R.F. reference frequency.
7. Added track time bias per Satellite.
8. Removed the shortened prepass when track is scheduled close to pass time. This will ensure that the uplink equipment will be configured.
9. Enhanced the control of NTP. When time on top level is in red, the time is not synchronized with NTP. When it is in green, time is synchronized with NTP. Changing the time from the SCC will stop NTP. Restart NTP by pressing the start NTP time button.
10. Enhanced scheduler to allow orbit zero.
11. Corrected scheduler bug that improperly changes the recorder start time to the beginning of scheduled pass time.
12. Improved I/O handler to recognize and recover from 'Broken pipe'.
13. Removed shortened prepass feature, which would not allow uplink to work for passes scheduled close to current time or by restarting the code close to or in the middle of a pass.
14. Added code to clear RF Frequency field on receiver GUI upon entering screen so that invalid value will not be displayed if the unit is off line.
15. Implement the software to incorporate a switch that interrupts the modulation signal to the HP8780 during sweep and holds it off until S/C coherent acquisition has occurred. All three sites should have a spare 4*1 switch (310-313) available for this function, so no additional hardware is necessary.

16. Upgrade ephemeris ingest that goes directly into SA computer to be an event that is either authorized or not authorized for that pass, i.e. scheduled, and delete the need for operator to upgrade and log into the system each time a new ephemeris is to be accepted. Change pop-up window so that ephemeris will be accepted, even without operator acknowledgement.
17. Prevent Boresight from activating immediately when modem is connected. Impact is potential to generate RFI. S-A deactivated the modem upon connect and disconnect.
18. Added a print tape button.
19. Added track time bias per Satellite.
20. Corrected status updates on recorder control screens when tape is removed from the tape log.
21. Added feature to start a non-coherent uplink acquisition with the Start Sweep button, when the scheduled configuration file had uplink disabled. (Lien List Item #2)
22. Widened fields on top-level screen for recorder sources.
23. Added OFFLINE status for DSI Bit Sync on top-level screen.
24. Fixed zero on noise for X-Band Signal strength to stay in linear voltage range of 924_1 Demods.
25. Added a print pass gen. button to the schedule screen.
26. Exciter redundancy switch enhancement. Exciter. When swapping exciter on the SCC between uplink and test inject, all the exciter set up information also change place.
27. Added text to some numbered recorder messages. Removed unnecessary error message.
28. Fixed intermittent schedule conflicts when manually scheduling recorders.
29. I/O Handler registers it's associated queue with control and status, removes the need for to continually modify iotable.c.
30. Corrected bug, which could not handle a remote schedule, which crosses a year boundary.
31. Sweep button color changes.
32. DPS switch 9-12 not being controlled at Wallops. (Lien item 22)
33. Added a flag into the SYSDEFAULT file to enable the station computer to override the Master track start/stop times and recalculate for horizon-to-horizon times. (CSC 11m Enhancement)
34. Added bit sync data per channel to sysdefaults file to accommodate easy change out of bit syncs.
35. GPS timing enhancement. Change software to give the ACU a new format of program track commands to enhance program tracking. Read new data from ACU, to have more accurate pass log data.
36. Set the uplink Marconi modulation meter to PM when entering the screens which show mod index. (Lien item 31)
37. Change _TrainLowPassAngle from 30.000000 to 70.0000 in sysdflts.ascii (Lien Item 15)

Files Affected:

The files that were developed and/or utilized as part of NASA 3.0 are listed in Attachment 1: NASA 3.0 FILES.

Hardware Requirements:

N/A

Validation Procedures:

NASA 3.0 will be validated on site the week ending 3/17/00 and continued daily testing at NASA/Wallops for scheduled satellite passes.

Known Bugs or Limitaions:

Some open DRs may not be resolved in this release due to equipment constraints.

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Installation Procedure:

To install this release, create a rel3.0 directory in the /home/aaas/releases directory. Copy Install and nasa3.0.tar.Z in to this directory. From /home/aaas/releases/rel3.0, run ./Install nasa3.0.

The installation script will create new bin and etc directories modify the bin and etc links to look at the new release directories. The old etc directory will be copied to the new etc directory. New executables will be placed in the new bin directory. The following new default files will replace the old default files: sbandSynth.defaults, xbandCh1Synth.defaults, xbandCh2Synth.defaults, xbandCh3Synth.defaults, xbandCh4Synth.defaults, xbandTestSynth.defaults, xbandTrackSynth.defaults. The script will also remove the sysdflt.bin file and replace the sysdflt.ascii file. Fixconfig will be run on the configuration files to fix possible corruptions related to the Marconi Track Synthesizer. NTP scripts will be copied in to the root directory.

The .ntpSyncInfo and .start_ntp files in the root directory (cd /) need to be modified for the correct time server IP address.

In the /home/aaas directory, edit the .cshrc file. Edit the station environment variable to identify the station: setenv Station "WGS 11m".

Documentation Affected:

N/A

Comments:

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Approval:

The software modifications described in this release notice has been validated and accepted.

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NASA WGS Project Manager Date

SOFTWARE RELEASED:

The software modifications described in this release notice have been completed and released to ground station operations.

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System Manager Date

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NASA Program Monitor Date

Attachment 1
NASA 3.0 Files

The bin Directory:

```
AntennaControlStartup
Displays
Nasa
NasaStart
Start
Stop
authent
configud
control
dpsHndlr
errhandler
eup
executive
file.lst
getNtpSyncInfo
ioh
pcltrans
pedcont
postPassShell
rci_client
rci_rmt
rci_server
reccon
recsch
resetLANGateway
rmqs
schedmon
snyHndlr
start.awk
start_ntp
status_l
stop.awk
stop_ntp
sup
tapelog
terminal
testexec
time_code_handler
track
uactask
winPrint
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The etc Directory:

sysdflt.bin

The etc/hpib directory:

N/A

The etc/config directory:

fixconfig

The etc/defaults directory:

sbandSynth.defaults
xbandCh1Synth.defaults
xbandCh2Synth.defaults
xbandCh3Synth.defaults
xbandCh4Synth.defaults
xbandTestSynth.defaults
xbandTrackSynth.defaults

The / directory:
.ntpSyncInfo
.start_ntp
.stop_ntp